

Health and Safety incidents among MOD personnel 2007/08

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And

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Summary

- 1. This report provides the latest figures for adverse work-related health outcomes occurring for health and safety reasons recorded on the Ministry of Defence's Incident Recording and Information System (IRIS) for Armed Forces personnel and civilian MOD employees for the financial year 2007/08¹.
- 2. The figures cover fatalities and various categories of injuries and illnesses. A brief account of the scope of the information recorded on IRIS is provided in the **Introduction** on pages 5 to 9, together with an explanation of the categories and the type of personnel covered.
- 3. Several of the main findings have shown marked changes in recent years. These are thought to be primarily due to procedural changes in the way data has been collected. The first was a revamp of CHASP in 2000, the second was the introduction of the Army's new system the Army Incident Notification Cell (AINC) and the third was the introduction of the Naval Service's new system the Naval Sector Incident Notification Cell (NSINC) (see the **Introduction** for further clarification). It is therefore not possible at present to know to what extent there have been real changes in health and safety incidents themselves that MOD personnel have suffered from. The introduction of the IRIS system has caused a decrease in the number of fatalities, major and serious injuries being reported (**Figures 19, 20, 21**). Due to this the IRIS data has been combined with data held on the AINC, NSINC and by Defence Equipment and Support (DINC) in order to improve the accuracy of the figures.
- 4. **Fatalities:** In 2007/08 there were 55 fatalities among regular Service personnel recorded onto IRIS (compared to 91 on CHASP in 2006/07), this represents a decrease of 40%. However this decrease should be interpreted with caution as it is thought to be partly due to changes in reporting. It is worth noting that not all deaths were reported on IRIS for 2007/08, as the DASA mortality database has records for a further 122 deaths that occurred during this period.
- 5. For the period 1st April 1998 to 31st March 2008 DASA were notified of 457 work-related deaths among UK regular Armed Forces. The most frequently recorded cause of death (excluding hostile action and road traffic accidents on the public highway) were rotary blade aircraft incidents and fixed wing aircraft incidents.
- 6. **Major injuries and illnesses to MOD personnel:** In 2007/08 the number of major injuries and illnesses to all MOD personnel was 1,015, an increase of 405% from 1998/99 and a 195% increase on the 2006/07 figure of 344. The Army recorded the majority (82%) of all major injuries and illnesses in the 2007/08 period, followed by the Naval Services (9%). The most common type of incident with 152 (15%) was 'sport'.
- 7. **Major injuries and illnesses to MOD Service personnel:** The overall rate of major injuries and illnesses to regular Service personnel in 2007/08 was 451 per 100,000 an increase of 232% on the 2006/07 rate of 136 per 100,000. For Naval Service personnel the rates fell between 1998/99 and 2004/05 from 84 to 40 per 100,000 respectively before rising dramatically in 2005/06. The reported incidence is 223 per 100,000 in 2007/08. Between 1998/99 and 2007/08 the incidence rate for the Army increased from 68 to 696 per 100,000 respectively however the rate fluctuated with a low of 59 per 100,000 in 2003/04. The RAF showed fluctuations with a low of 32 per 100,000 in 2001/02 and a high of 87 per 100,000 in 2004/05. The rate for 2007/08 is 41 per 100,000. The steady increase in major injuries is thought to be due to the introduction of the Incident Notification Cells and safety awareness in general.
- 8. **Major injuries and illnesses to MOD civilian personnel:** Between 1998/99 and 2007/08 the rate of major injuries and illnesses has increased from 57 to 93 per 100,000 employees respectively, during this time the rate reached a low of 39 per 100,000 in 2001/02. When both major and serious injuries are combined the MOD is on target to achieve the HSE target for 2010 for a 10% reduction in injuries. The three most frequently recorded major injuries were 'slipped, tripped or fell on same level', 'struck against' and 'physical movement'. A table of major and serious injuries and illnesses by the Top Level Budget Management Group for MOD civilian and Service personnel has been provided up until 2006/07. This data cannot be provided for 2007/08 as it is not captured by IRIS.

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¹ As at 18 Sept 2008

Non-fatal Health and Safety Executive (HSE) notifiable injuries and illnesses to MOD personnel: Non-fatal HSE notifiable injuries and illnesses decreased from 2,594 incidents in 2006/07 to 2,293 incidents in 2007/08, an decrease of 12%; 1,943 (85%) of these events were to Service personnel. 348 (15%) of the incidents involved 'slipped, tripped or fell on same level'

- 9. Over the period 1999/00 to 2000/01 the rate of notifiable events increased from 95 to 408 per 100,000 respectively. The likely cause of this was the introduction and promotion of version 2 of CHASP. Since 2000/01 there has been a steady increase in the number of events recorded onto CHASP. This is thought to be due to the introduction of AINC and similar call centres. However in 2007/08 when IRIS was introduced, with the exception of the Naval Service, each sector showed a drop in the rate of Non-fatal HSE notifiable injuries.
- 10. **Near hits:** There were 766 near hits accounting for 9% of all events recorded during 2007/08.
- 11. **Dangerous occurrences and environmental events:** During 2007/08 a total of 13 dangerous occurrences and 138 environmental incidents were recorded on IRIS. The most common kind of dangerous occurrence was due to 'harmful substances' and 'moving/falling object' (3, 23% dangerous occurrences). The most common kind of environmental event involved 'harmful substances' (108 events, 78% of all environmental incidences).
- 12. **Audit of IRIS:** DASA have been working with the TLB incident notification cells and RAF SHEF advisors to improve the quality of data captured on IRIS. The number of records excluded from analysis in this report is 55, compared to 1,765 in 2006/07. It is also worth noting that DASA monitor the classification of injuries and illnesses and minor fluctuations in the reporting of major and serious injuries may be due to the reclassification of a number of conditions. The data extract for this report was taken on the 18th September 2008. At that point in time approximately 50% of all record reported in this report were NOT on IRIS. In order to provide as complete a report as possible DASA received data extracts from the four notification cells: Army, Naval Service, Defence Equipment Support and Central TLB which were combined with IRIS data and all duplicates removed.
- 13. **Time trends:** in order to provide 10 year time trends DASA have combined data from CHASP for the period 1998/99 to 2006/07 with the data from IRIS and the notification cells for the period 2007/08. Due to problems in data quality and the high costs of data migration the IRIS project working group made the decision to NOT migrate the CHASP data onto the IRIS system. Thus DASA remain the data asset owner for the legacy CHASP data whilst SSDC are the asset owners for the IRIS project.

Introduction:

- 14. This report presents the latest figures for injury and illness to Service and civilian personnel as recorded on the MOD's Incident Recording and Information system (IRIS) and/or notification cells during the financial year 2007/08.
- 15. The IRIS system was introduced in December 2007 to enable the MOD to monitor and analyse accident trends throughout the Department and ensure compliance with current health and safety legislation. This system was introduced to replace the Central Health and Safety Project (CHASP) database. CHASP was introduced in 1997 and in April 2000, following a review of the system's performance, including compliance and data quality, a second version of CHASP was launched, introducing improvements to the system and clarification of the data types required for analysis and reporting. This new version of CHASP was widely publicised and promoted, leading to a noticeable improvement in reporting adverse health and safety incidents on the CHASP system, as can be seen in some of the data in this report (e.g. **Figure 16**).
- 16. In March 2007 the CHASP mainframe was closed down and a final effort was made to ensure that all records prior to 31 March 2007 were loaded onto the system. Since March 2007 the Top Level Budget holders have been responsible for maintaining their health and safety reports prior to the introduction of the new IRIS system on 22 December 2007. The data held by the Top Level Budget holders has been added to the data held on IRIS in order to achieve as accurate figures as possible.

Reporting Procedures

- 17. Whenever a reportable incident occurs, a form (MF2000) should be raised according to the guidelines set out in MOD's instruction manual JSP442². This manual defines the circumstances dictating when an incident should be recorded and the type of information required. Once complete it should be forwarded to CHASP helpdesk staff for entry onto the database. A copy of the database is sent to DASA for analysis and reporting. However, there are currently no mechanisms for DASA to query the data entered with those who raise the MF2000's which may account for some of the data quality issues found.
- 18. Since 2007 DASA have engaged with the key stakeholders to improve data quality issues including missing fields and incorrect coding. This has led to many more records being included in this report.

The Army Incident Notification Cell (AINC)

19. During 2004/05, the Army trialled a new system for reporting health and safety incidents, allowing Army personnel to report health and safety incidents to a dedicated 24 hour call centre. Following this initiative, AINC has been rolled out throughout the Army, leading to a marked improvement in the number of events reported on CHASP. At present this system only records incidents requiring professional medical treatment at either an MRS, a doctors' surgery or an Accident and Emergency department, or resulting in 3 days off work (including 3 days light duties). Despite the use of the AINC reporting system and the increase in the number of events reported onto CHASP there is considerable under reporting on IRIS (**Figures 19, 20, 21**).

The Naval Sector Incident Notification Cell (NSINC)

20. During 2005/06, the Naval Service rolled out a new system for reporting health and safety incidents, allowing Naval personnel to report health and safety incidents to a dedicated call centre. The roll-out started in February 2005 and had been phased in by the end of 2005. The notification cell was reporting all major and serious incidents onto the CHASP system (as defined in JSP 442) and has continued this process with IRIS.

The Defence Equipment and Support Cell (DINC)

21. Since April 2005 any incident/accident to DE & S staff has been reported through the De & S Incident Notification Cell. Reportable incidents include fatalities, workplace injuries, occupational ill health, near misses, dangerous occurrences, loss or damage to property or equipment, environmental pollution and fires.

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² JSP442 Version 2 01/04/2000, page 10

The Central Incident Notification Cell (CINC)

22. Since 2008 any incident/accident to central TLB staff has been reported through the Central Incident Notification Cell. Reportable incidents include fatalities, workplace injuries, occupational ill health, near misses, dangerous occurrences, loss or damage to property or equipment, environmental pollution and fires.

IMPORTANT NOTE: Records excluded from this report

23. When an incident involving Service personnel is recorded on IRIS without their corresponding Service numbers or a personnel status these records are entered to the same category as non-MOD personnel. It is currently very difficult to distinguish Service personnel recorded in this way from external contractors or visitors to MOD property. These records had to be excluded in the analyses of Health and Safety Executive (HSE) notifiable events below, amounting to 55 records for 2007/08. It is therefore important to note that the HSE notifiable events for both civilian and military personnel presented in this report are likely to represent an under-count of the true situation.

Data, definitions and methods

Health and safety incidents: cases covered

- 24. The information provided here covers a range of health and safety incidents as set out by the HSE Reporting of Injuries, Diseases and Dangerous Occurrences regulations 1995 (RIDDOR). Cases include both MOD and non-MOD personnel: regular Service personnel, members of the volunteer and regular reserves if they have been mobilised, MOD civilian staff, and any other civilians on MOD property or injured in or by MOD vehicles. For any civilians involved, normal procedures should be followed for notifying the HSE of the incidents. For Service personnel, there is no current legal requirement, set out by the RIDDOR, for their injuries to be notified to the HSE. However, all of these incidents should be recorded on IRIS.
- 25. A reporting form should be raised for recording any of the following events on IRIS:
 - deaths resulting from work activity;
 - injuries or ill health to MOD employees resulting from their work activity, which in normal circumstances would cause more than one hour loss of work time;
 - deaths, injuries or illness to any other person where the cause might be attributable to MOD
 activities or where it has occurred on MOD land or property, which can be linked to a failure
 in responsibility by the MOD with regard to land or property;
 - including those involving hostile activity during peacekeeping (excluding war);
 - an event which would normally have resulted in one of the above outcomes but no person was affected (near hit, maritime hazardous incident or an event deemed worthy of reporting such as fire or property damage).
- 26. The following paragraphs provide some brief descriptions of the circumstances involved.

Fatalities

27. The deaths recorded on IRIS and reported here are those deemed to have occurred as a result of work-related incidents. Thus they may not include disease-related deaths, all road traffic accidents (on the public highway) and deaths thought to be as a result of suicide.

Major injuries and illnesses

- 28. Major injuries and illnesses are defined by the HSE as work-related cases which:
 - could result in death or in hospitalisation (or being confined to bed, if at sea) for more than 24 hours
 - result in a person not in MOD employment and who was not at work to be taken from a MOD site to a hospital for treatment as a result of MOD work activity or site infrastructure.
 - a specific type of injury e.g. fracture (except for fingers, thumbs and toes)

Serious injuries and illnesses

29. Serious injuries and illnesses are those that are not defined as "major" according to the above criteria but which could result in a person being unable to perform their normal duties for more than three days.

HSE notifiable incidents

30. As mentioned earlier (see **para 20**), the IRIS system records incidents occurring to Service personnel and to MOD civilian employees according to RIDDOR criteria (a complex set of criteria including all dangerous occurrences, major and serious injuries and illnesses and deaths). Only events involving civilians have to be notified to the HSE. This report provides information on both groups for comparative purposes.

Dangerous Occurrences

31. IRIS is also designed to record specific, unplanned, uncontrolled events which have the potential to cause injury or damage and are listed in Schedule 2 of RIDDOR (1995).

Statistical measures

Numbers and rates

32. This report provides data on the number of incidents recorded by IRIS. Where possible we also provide crude rates based on the overall known population. For Service personnel, it should be noted that DASA do not have reliable denominators for the reservist population, therefore the rates for Service personnel exclude reservists. For civilians, DASA only have information on MOD employees, not on external contractors. It is important to note that crude rates are not strictly comparable owing to the possible different age and gender profiles of the baseline populations. This would apply particularly between Service personnel and civilian personnel as the former are predominantly composed of young people.

Three-year moving averages

33. When annual numbers are small, such as the number of deaths, these may be subject to fairly wide fluctuations largely due to chance. Therefore, to assist with the perception of time trends, we have presented three-year moving averages which iron out some of these fluctuations.

Deaths in the regular Armed Forces: information held by DASA

UK regular Armed Forces: death data

- 34. In order to assess the quality of deaths information recorded on IRIS, this report uses the UK regular Armed Forces deaths data from DASA's mortality database covering the 12 year period 1997 to 2008. The dataset include all trained and untrained regular Service personnel. The data excludes the Home Service of the Royal Irish Regiment, mobilised reservists, full time reservists, the Territorial Army and the Naval Activated Reservists since DASA do not receive routine notifications of all deaths among reservists and non-regulars. Note that the Naval Service includes both the Royal Navy and the Royal Marines.
- 35. DASA receive regular notifications of deaths to Service personnel, with a brief summary of the cause and circumstances, by signal and weekly updates since 1 April 2005 from the Joint Casualty and Compassionate Cell (JCCC), and the single casualty branches previously (referred to collectively as "JCCC" in this report). Further information is derived from medical documents (Fmed14s) raised by Service medical officers, who record the cause(s) of deaths, and from post-mortem reports. Since 2005, DASA have added to their database the cause information recorded on death certificates provided by the Office for National Statistics for deaths in the UK, as well as information on coroner's verdicts³.
- 36. Deaths occurring overseas are more problematic. Where the deceased's body is returned to the UK for burial or cremation, the body is sent to a coroner for inquest and verdict. In the exceptional case where the deceased's body is not returned to the UK, death certificates will be raised in the country of occurrence. In some countries cause of death information does not form part of the public record and will therefore not be available to DASA for analysis.

³ Following recent concerns, DASA now check all deaths for information on coroners verdicts (England and Wales) and the results of investigations by the Procurator Fiscal for Scotland on an annual basis. For Northern Ireland, DASA liaise with the Northern Ireland Statistics and Research Agency (NISRA) who handle the official information on behalf of the Northern Ireland Office. In this report, for sake of brevity, we have labelled all these sources of information as 'coroner's verdicts'. There is an obligation for all accidental deaths, and those resulting from violent action, and deaths due to specified work-related conditions (such as mesothelimoa among asbestos workers) to be referred to these officials. Inquests are usually held within a few months of the death, but occasionally a few years may elapse. Therefore some recent deaths may not yet have a clearly defined cause of death.

37. DASA use all these diverse sources to code as much information as possible together with details of the external circumstances of the death for the analyses they publish.

Cause of death classifications and categories describing circumstances of death

- 38. DASA use one principal coding system for recording the information on causes and circumstances of deaths provided by the sources listed above: the World Health Organisation's International Statistical Classification of Diseases and Health-related problems 10th version (ICD-10). In addition, DASA also record the categories used by the JCCC for reporting deaths and coroners' verdicts.
- 39. The ICD-10 is the internationally-recognised standard for reporting all cause of death data. It is structured on a pathological and anatomical basis for recording medical conditions. For deaths caused by injury, the ICD provides for recording the nature of the injury and the part of the body affected. The external cause(s) of the injury is also recorded, either accidental (e.g. transport accidents, falls or fires) or violent (e.g. suicides, assaults and war-related deaths).
- 40. The JCCC use a second, albeit brief, set of casualty reporting categories to describe the circumstances of a death⁴. Five casualty reporting categories describe the death ("killed in action", "died on operations" etc), 8 provide a summary cause ("enemy action", "operational accident" etc) with 3 additional categories in case of a NBC event. There are also 7 management categories ("identity confirmed", "on duty" etc). The primary purpose of this system is for rapidly informing the next of kin and the Chain of Command, rather than detailed and rigorous analysis. It also does not map easily onto the ICD-10 system.
- 41. DASA are now working with the Chief Environmental Safety Officers to start identifying deaths as a result of workplace incidents (defined as those occurring 'within the wire').
- 42. DASA and the JCCC have addressed the issues of duty status for all historic injury-related death records (1989-2005) with full validation checks of the fields to ensure the consistency required by statistical analyses⁵. DASA now maintain a single deaths database compiling all the different strands of information which will permit answers to a wide range of questions required by the department.
- 43. DASA still have concerns over the use of definitions by the three Services, who occasionally use the same terms to mean different things, e.g. "training" and "exercise". DASA are now engaging with SSDC and the principle stakeholders to address this and hope to have a common set of definitions for the roll out of the new IRIS accident reporting system.
- 44. For the purpose of this report, "work-related fatalities" have been defined as injury related deaths occurring on-duty or on MOD property after excluding suicides. "Hostile action" is the combination of the JCCC reporting categories killed in action and died of wounds for operational deaths that are a result of hostile fire. Between 1998 and 2008 the UK regular Armed Forces have been deployed to Northern Ireland, Sierra Leone, the Balkans, Afghanistan and Iraq. Road traffic accidents are those which occur on public highways whilst the Service personnel are on duty. A work place incident is the result of a fatality for which the MOD is responsible, that is they are deemed to be 'within the wire', thus work place incidents will include any vehicle incidents that occur on MOD property.
- 45. In order to clarify the distinction between deaths recorded on IRIS and those on DASA's mortality database we have adopted the convention here of referring to those recorded on IRIS as "fatalities" (with corresponding fatality rates) and those on DASA's database as "deaths".

Use of coding systems for this report

- 46. This report uses the ICD-10 coding system together with information on duty status and JCCC reporting categories.
- 47. The CHASP 2005/06 report focused on those fatalities reported on the CHASP system, however following concerns raised by Surgeon General with regards to interpreting trends, the reports from 2006/07 onwards use the information supplied by DASA's deaths database and merely note the number of fatalities recorded on IRIS.

⁵ A similar exercise has yet to be carried out for disease-related conditions

⁴ The latest version can be found at JSP751, Chapter 2, Annex A.

Fatalities recorded on IRIS

48. **Table 1** provides information on the number of fatalities reported on IRIS in comparison to the total number of deaths to UK Service Personnel. The 55 fatalities recorded on IRIS for 2007/08 do not provide the complete picture of fatalities known to DASA to have occurred among Service personnel according to the criteria set out in **para 24**. For example, DASA's mortality database contains records for a total of 94 injury-related deaths that occurred on-duty to Service personnel during 2007/08, reported to DASA by the JCCC. This compares to 41 fatalities recorded on IRIS for the same period.

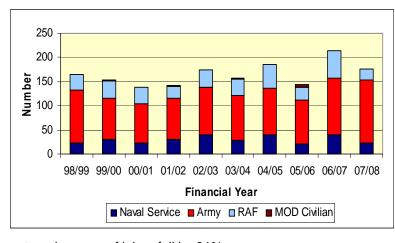
Table 1: Comparison of numbers of fatalities by cause to Service personnel as recorded on IRIS and DASA's mortality database, 2007/08

Cause		IRI	S Fatalitie	es		DASA Deaths					
				Under				Under			
	All	On Duty	Off Duty	Investigation	All	On Duty	Off Duty	Investigation			
All	55	42	13	0	177	101	75	1			
Disease-related conditions	1	1	0	0	34	5	29	0			
External causes of injury	53	41	12	0	140	94	45	1			
Deaths due to Accidents	26	15	11	0	65	26	39	0			
Road Traffic Accident	18	8	10	0	40	13	27	0			
Other	8	7	1	0	25	13	12	0			
Deaths due to Violence	27	26	1	0	69	68	1	0			
KIA	26	26	0	0	67	67	0	0			
Other	1	0	1	0	2	1	1	0			
Suicide and Open verdicts	0	0	0	0	6	0	5	1			
Cause not currently available	1	0	1	0	3	2	1	0			

49. The following section on deaths will refer to the DASA figures not the fatalities reported on IRIS.

Deaths recorded on DASA's deaths database

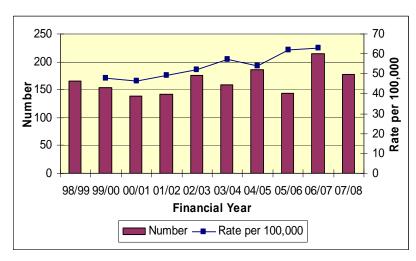
Figure 1: Deaths to MOD personnel



external causes of injury fell by 31%.

50. There were 177 deaths in 2007/08 all of which involved Service personnel (**Figure 1**) this is a 17% decrease from 2006/07 figure of 214. In 2007/08 off-duty deaths fell by 31% and on duty deaths fell by 4%. The most common cause was hostile action which accounted for 67 deaths, followed by 'road traffic accidents' with 40. Whilst deaths due to hostile action have increased by 18% since 2006/07, deaths due to disease fell by 17%, road traffic accidents fell by 38% and other

Figure 2: Deaths to MOD personnel Numbers and 3-year moving average rates



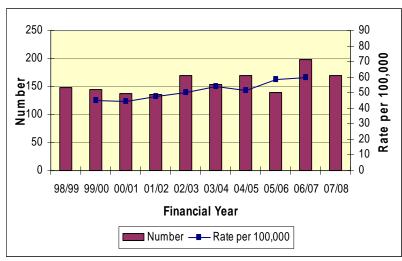
For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2000.

Rates and numbers for Service personnel exclude reservists.

51. Figure 2 provides the 3-year moving averages and number of deaths to MOD Service and civilian personnel. The 3-year average moving rates smooth out some of the random variation that may be caused by large year on year fluctuations in the number of fatalities. The 3-year moving rate increased year on year from 1999/00 to 2003/04 rising by 19% from 48 to 57 per 100,000 respectively before falling by 5% in 2004/05 to 54 per 100,000. The rate then rose again in 2005/06 by 15% to 62 per 100,000, in 2006/07 the 3year moving rate rises slightly by 2% to 63 per 100,000.

52. Over the last few years there have been a number of air transport incidents resulting in multiple deaths. If deaths due to air transport incidents are removed the previously observed upward trend is less prominent. The increase in 2005/06 however, remains noticeable (**Figure 3**).

Figure 3: Deaths to MOD personnel, excluding air transport incidents Numbers and 3-year moving average rates



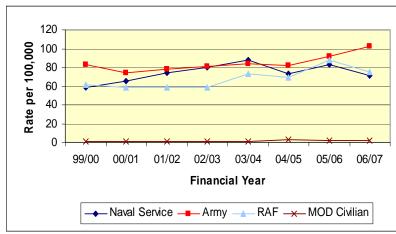
For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2000.

Rates and numbers for Service personnel exclude reservists.

Figure 3 examines the 53. same data without deaths due to air transport incidents. There are some minor changes in 2002/03 and 2004/05. 2002/03, the collision of 2 Sea King helicopters during the early phase of Op TELIC (Iraq) in March 2003 resulted in the loss of 6 lives. The previous day a helicopter crashed on the Iraq/Kuwait border with the loss of 8 lives. Similarly in 2004/05, a Lynx helicopter crashed in the Czech Republic with the loss of 6 lives. In the same reporting period a Hercules crashed in Afghanistan with the loss of 10 lives. In 2006/07 a Nimrod crashed in Afghanistan with the

loss of 12 Service personnel. In 2007/08 there were 8 deaths due to air transport accidents. With air transport incidents excluded the number of deaths in the 3 year moving period of 2006/07 shows a rise of 3% from 58 to 60 per 100,000 compared to a smaller increase of 2% when these incidents are included.

Figure 4: Deaths to MOD personnel 3-year moving average rates



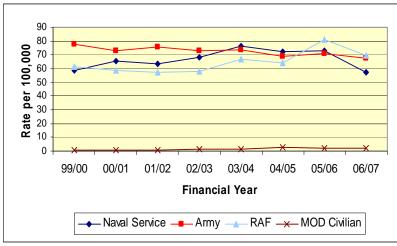
For all MOD civilian and regular Service personnel the 3-year moving average deaths rate rose from 48 per 100,000 to 63 per 100,000 from 1999/00 2006/07 respectively. In 2006/07 the death rate for the Army shows an increase on the previous 3-year average moving rate whilst the Naval Services and the RAF both show deceases (Figure 4). The rate for MOD civilians remains stable.

For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2000

Rates and numbers for Service personnel exclude reservists.

- 55. For the Army, the 3-year moving-average death rate rose from 91 to 102 per 100,000 employees from 2005/06 to 2006/07 a rise of 12%. The most common cause of death among the Army was hostile action followed by road traffic accidents.
- 56. From 2005/06 to 2006/07 the Naval Service rate decreased from 83 to 71 per 100,000 a fall of 15%. The most common cause of death among Navel personnel was disease related conditions followed by hostile action and road traffic accidents.
- 57. The RAF had a decrease of 15% from 88 to 75 per 100,000 from 2005/06 to 2006/07 respectively. Disease related conditions were the most common cause of death among RAF personnel followed by hostile action.
- 58. There were no work related deaths among MOD civilian personnel in 2007/08 and the rate remained unchanged from the previous 3-year moving rate.

Figure 5: Deaths to MOD personnel, excluding hostile action 3-year moving average rates



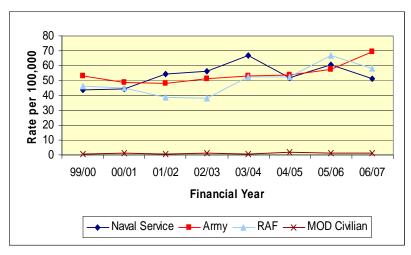
For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2000.

Rates and numbers for Service personnel exclude reservists.

Since 2001/02 there has been an increase in the rate of deaths as a result of hostile action (killed in action and died of wounds), among Service personnel only, from a rate of 0.5 per 100,000 in 2001/02 to 35 per 100,000 in 2007/08. This reflects the deployments to Iraq & Afghanistan and the changing tempo of operations. Of the deaths recorded in 2007/08, 67 (38%) were due to hostile action an increase of 18% from 2006/07. With these removed deaths all three Services have shown decrease on the previous three year moving average rate. The

Naval Services showed the biggest decrease of 22% from 73 to 57 per 100,000. The RAF rates fell from 81 to 69 per 100,000 a fall of 15% and the Army rates fell by 4% from 71 to 68.

Figure 6: Deaths to MOD personnel, excluding road traffic accidents 3-year moving average rates



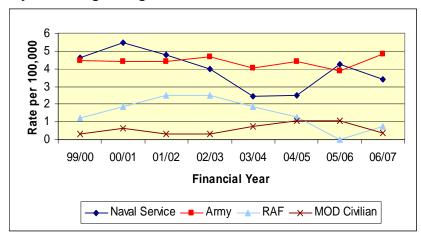
For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2000.

Rates and numbers for Service personnel exclude reservists.

60. Of the deaths recorded in 2007/08, 40 (23%) were due to road traffic accidents. All but 13 of these occurred off duty. With road traffic accidents removed Naval Services 3-vear moving average death rate decreased from 60 to 51 per 100,000 in 2005/06 to 2006/07 respectively a decrease of 15%, the same level of decline when RTA's are included. The RAF showed a decrease of 13% from 67 to 58 per 100,000 compared with a decrease of 15% when RTA's included. However when road traffic accidents were removed for the same period, the Army

3-year moving average death rate rose from 57 to 70 per 100,000 employees, an increase of 23%, compared to an increase of 12% when RTA's were included.

Figure 7: Deaths to MOD personnel, including injuries on-duty only 3-year moving average rates



For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 - 2000/2000.

Rates and numbers for Service personnel exclude reservists.

The rates in figure 7 include injuries that occurred on duty only and exclude all road traffic accidents, air transport accidents, hostile action, disease related conditions, suicide and open verdict deaths and those deaths for which the cause is unknown. The rates for the RAF rose to 0.8 per 100,000 an increase from the previous three year moving rate of 0 per 100,000. There has only been one death among RAF personnel when categories are excluded since 2003/04. The Naval Service fell from 4 to 3 per 100,000.

The Army however showed an increase of 25% from 4 to 5 per 100,000. This increase was caused by 3 non-operational and 2 operational accidents. The MOD civilian rates dropped from 1 to 0.4 per 100,000 from 2005/06 to 2006/07.

Work-related deaths recorded on DASA's mortality database

62. For the period 1st April 1998 to 31st March 2008, DASA were notified of 457 work-related deaths among UK regular Armed Forces (see **para 41** for definitions). **Tables 2** and **3** show the main cause categories by financial year.

Table 2: On-duty work-related fatalities by type of incident*

Type of incident	Total	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
Total	457	30	28	18	29	45	43	45	34	92	93
Hostile action	204	0	1	1	2	22	19	20	15	57	67
Road traffic accident	91	10	7	7	9	9	9	8	9	10	13
Work place incident	162	20	20	10	18	14	15	17	10	25	13

^{*}excludes coroner confirmed suicide and open verdicts

Table 3: On-duty work place incidents* resulting in injury-related deaths by cause

Work Place Incidents	Total	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
Total	162	20	20	10	18	14	15	17	10	25	13
Adventure training	4	1	0	2	0	0	0	0	1	0	0
Diving	3	0	0	0	2	0	1	0	0	0	0
Drowning	7	2	1	0	0	2	0	1	0	0	1
Electrocution	2	0	0	1	1	0	0	0	0	0	0
Explosive divice	6	0	2	0	1	2	0	0	1	0	0
Fall	12	1	1	3	2	0	1	0	2	1	1
Fixed wing aircraft	29	5	4	0	2	1	1	2	0	14	0
Gunshot wound	13	0	1	0	1	1	4	1	2	1	2
Heat Injury	5	1	0	0	0	0	2	0	1	1	0
Parachute failure	8	0	1	1	1	2	0	0	2	0	1
Sport	2	0	0	0	0	1	0	0	1	0	0
Rotary blade aircraft	35	4	4	0	4	2	2	11	0	1	7
RTA - MOD property	2	2	0	0	0	0	0	0	0	0	0
Land transport accident	20	4	3	1	3	1	3	2	0	3	0
Other	14	0	3	2	1	2	1	0	0	4	1

^{*}excludes coroner confirmed suicide and open verdicts

- 63. The classification of cause presented in **Table 3** is based on the best available information to DASA. DASA, however, do not receive all data regarding the circumstances of death. For example, "adventure training" is based on information in the NOTICAS signal and refers to the activity the deceased was engaged in rather than the specific cause of death. There may have been other deaths that occurred during adventure training but they may not have been recorded as such.
- 64. **Table 4** includes deaths that were recorded as 'off duty', however because they have occurred 'within the wire' they are considered to be work-place incidents and thus fall under the CHASP JSP reporting requirements.

Table 4: Off duty work place incidents* resulting in injury-related deaths by cause

Work Place Incidents	Total	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08
Total	23	3	3	2	3	2	3	1	0	1	5
Fall	2	0	1	0	0	0	0	0	0	0	1
Parachute failure	1	0	0	0	0	0	1	0	0	0	0
Substance abuse	16	3	2	2	3	2	1	1	0	0	2
Other	4	0	0	0	0	0	1	0	0	1	2

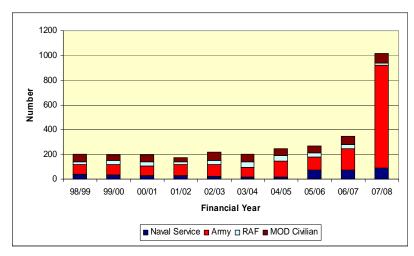
^{*}excludes coroner confirmed suicide and open verdicts

65. DASA have been notified of 23 injury related deaths that occurred off-duty (**Table 4**) that have occurred to regular Service personnel on MOD property. The term "substance abuse" is used to refer to incidents where the individual had taken excessive alcohol and/or drugs resulting in a fatal accident.

Major injuries and illnesses to MOD personnel

66. As CHASP was discontinued before the IRIS system was launched the individual notification cells were responsible for recording their own incidents onto their separate systems. To ensure the incidents that fell between these months were then migrated onto IRIS the figures for major and serious injuries include data from IRIS and the AINC, NSINC, DINC and CINC.

Figure 8: Major injuries and illnesses to MOD personnel

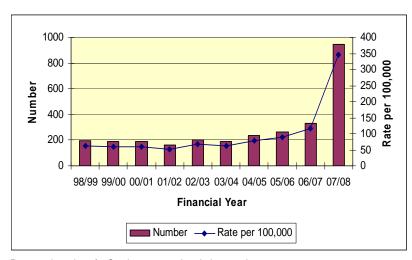


2007/08 1,015 67. During incidents were recorded as major injuries and illnesses to MOD personnel (Figure 8). Of these 939 involved Service personnel and 76 MOD civilians. The Army recorded the largest number (832), which is a 392% increase since 2006/07. This increase has likely been caused by the introduction of **AINC** the system. The combination of data AINC and IRIS in this report, suggests that there have been serious underreporting of

major injuries by the Army historically onto CHASP and onto IRIS. For the RAF the number of major injuries fell by 49% in 2007/08 from 35 to 18, this has likely been caused by under reporting onto the IRIS system. The number of injuries to Naval Service personnel rose from 75 to 89 an increase of 19%. For MOD civilians the number of major injuries and illnesses rose by 17% from 65 to 76.

68. 'Sport' was the most common cause of major injuries, 152 such events were recorded representing 15% of the total. The second most common cause was those due to 'slipped, tripped or fell on the same level', with 148 injuries (15%).

Figure 9: Major injuries and illnesses to MOD personnel Numbers and rates

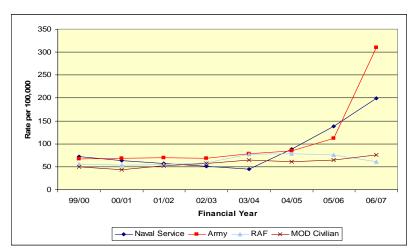


Rates and numbers for Service personnel exclude reservists.

In 2007/08, the rate for 69. major injuries and illnesses for all regular Service and MOD civilian personnel was 345 per 100,000 employees (Figure 9). From 1998/99 to 2001/02 the rate fell year on year from 61 to 53 per 100,000 respectively before rising in 2002/03. Since 2003/04 the annual rate of major injuries had increased each year, this is likely to have been caused by an increase in awareness of health and safety related issues and the improvement of reporting via notification cells. The increase

of 195% from 117 per 100.000 in 2006/07 highlights the level of underreporting in previous years.

Figure 10: Major injuries and illnesses to MOD personnel 3-year moving average rates



For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2000.

Rates and numbers for Service personnel exclude reservists.

70. The 3-year moving rate for the Naval Service showed a steady decrease from 1999/00 to 2003/04 falling by 38% from 72 to 45 per 100,000. Since 2003/04 the rates increased each year reaching 199 per 100,000 in 2006/07. The RAF 3-year moving rates remained relatively stable from 1999/00 to 2002/03 increasing by only 5%. In 2003/04 the RAF rate increased to 77 100.000 a rise of 31% from 59 per 100,000 the previous year. The rates then only show slight changes until 2005/06. From 2005/06 to 2006/07 the RAF rates fell by 21% from 77 to 61

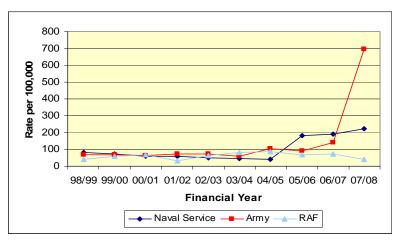
per 100,000. During the period 1999/00 to 2002/03 the 3-year moving rates for the Army showed only minor fluctuations. From 2002/03 to 2005/06 the Army rates rose each year, increasing from 68 to 112 per 100,000 respectively a rise of 65%. In 2006/07 the Army rates rose by 177% to 310 per 100,000, this increase suggests that there has been previous underreporting by the Army. The MOD civilian 3-year moving rates have increased by 52% from 50 to 76 per 100,000 from 1999/00 to 2006/07. The 2006/07 figure was an increase of 19% from the previous 3-year moving rate of 64 per 100,000.

71. Although there has been a steady increase in MOD civilians and a more dramatic increase in the Army and Naval Service for major injuries it should be noted that this is most likely to reflect better reporting and recording cultures within these Services, and may not necessarily indicate these as areas of higher risk. For example, the CESO (N) staff have not observed a rise in any of their other data systems indicating higher levels of risk.

Major and serious injuries and illnesses to MOD Service personnel

72. This section in provides further data on the trends for major and serious injuries and illnesses among personnel for the three Services (the definitions of 'major injury' and 'serious injury' can be found in **para 25** and **26**).

Figure 11: Major injuries and illnesses to MOD Service personnel



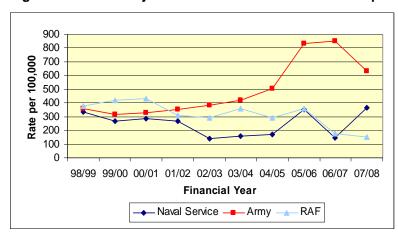
Rates for Service personnel exclude reservists.

Figure 11 shows the rate of major injuries for the three Services by financial year. The year on year fluctuations become more apparent than in the 3-year moving rates (Figure 10). For the Naval Services the major injury and illness rate has decreased each year from 1998/99 to 2004/05 falling by 52%. From 2004/05 to 2005/06 the rates showed a large increase of 355% from 40 to 182 per 100,000, this corresponds with the introduction of the NSINC. In 2006/07 there was a small increase of 5% to 192 per, 100,000. For 2007/08

the rate was 223 per 100,000 an increase of 16% on the previous year. The rates for the Army fluctuated between 59 and 74 per 100,000 before 2003/04, from 2003/04 to 2004/05 the rate increased by 76% from 59 to 104 per 100,000. The Army rates dropped by 13% to 91 per 100,000 in 2005/06 before rising by 56% in 2006/07. The Army then had a more dramatic rise of 390% from 142 to 696 per 100,000 in 2007/08. In 2007/08 the Army recorded the majority (88%) of major injuries to Service personnel whilst they constituted 57% of the population at risk. The RAF rates increased from 1998/99 to 2000/01 by 75% rising from 40 to 70 per 100,000 before declining sharply in 2001/02 falling by 54% to 32 per 100,000 From 2001/02 the rates rise each year reaching 87 per 100,000 in 2004/05, this is followed by a decrease of 22% in 2005/06 to 68 per 100,000 before rising by 10% in 2006/07 to 75 per 100,000. In 2007/08 the rate fell by 45% to 41 per 100,000.

- 74. For the Naval Service the most frequently recorded kind of incident in 2007/08 was 'slipped tripped or fell on same level' (21 out of 86 incidents, 24%), 'sport' (9 incidents, 10%) and 'slipped, tripped of fell on stairs' (9 incidents, 10%).
- 75. For the Army the most frequently recorded were 'hostile activity' (127 out of 766 incidents, 17%), 'sport' (122 incidents, 16%) and 'slipped tripped or fell on same level' (84 incidents, 11%).
- 76. For the RAF the most frequently recorded were 'sport' (6 out of 18 incidents, 33%), 'slipped tripped or fell on same level' (3 incidents, 17%) and 'parachuting' (2 incidents, 11%).
- 77. The fluctuations in each Service are unlikely to have been caused by significant changes in the number of accidents but rather by differing reporting practices and for the Army and the Naval Services the use of the data held by the AINC and the NSINC in this report. As the RAF use station based SHEF advisors and do not centrally compile their data it is not possible to know if there is under-reporting on IRIS for the RAF. It is most likely that the fall in RAF numbers in 2007/08 was due to data migration problems onto IRIS rather than a true fall in the number of incidents.

Figure 12: Serious injuries and illnesses to MOD Service personnel



Rates for Service personnel exclude reservists.

During the period 1998/99 to 2007/08 recorded incidences that lead to serious injuries and illnesses among Naval Service personnel have risen from 332 to 368 per 100,000. However the rates have fluctuated during this period with lows in 2002/03 and 2006/07 of 142 and respectively and highs in 2005/06 and 2007/08 of 351 and 368 respectively (Figure 12). The Army has shown significant increases rising from a low of 316 per 100,000 in 1999/00 to a high of 850 per 100,000 in 2006/07 before dropping to 635

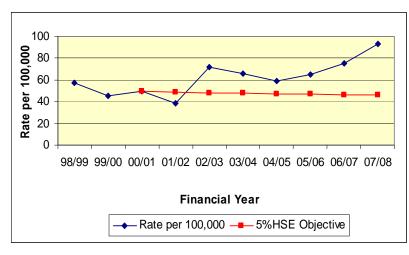
100,000 in 2007/08. The RAF rate rose from 375 per 100,000 in 1998/99 to a high of 433 per 100,000 in 2000/01 before dropping to a low of 154 per 100,000 in 2007/08.

- 79. For the Naval Service the most frequently recorded types of incident in 2007/08 were due to 'slipped, tripped or fell on same level' (22 out of 142 incidents, 15%), 'handling' and 'sport' (21 incidents, 15%).
- 80. In 2007/08 the most frequent kind of incident for the Army is 'slipped, tripped or fell on same level' (99 out of 698 incidents, 14%), 'sport' (87 incidents, 12%) and 'hostile activity' (82 incidents, 12%).
- 81. For the RAF the most common kind of incident were 'sport' (16 out of 68 incidents, 24%), 'slipped, tripped or fell on same level' (13 incidents, 19%), and 'physical movement' (9 incidents, 13%).

Major and serious injuries and illnesses to MOD civilian personnel

82. The Health and Safety Statistics Highlights report 2003/04 (HSE) specified a national target for reducing injuries among employees at work throughout England and Wales. They have defined a "revitalising indicator", comprised of the worker rate of fatal injury and the employee rate of major injury and set the target to reduce this indicator by 10% in the ten year period 1999/2000 to 2009/10 and by 5% by 2004/05.

Figure 13: Major injuries and illnesses to MOD civilian personnel

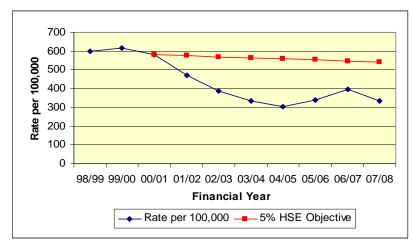


Between 1998/99 and 83. 2007/08 the rate of major injuries and illnesses to MOD civilian personnel has fluctuated, starting with 57 per 100,000 in 1998/99 and falling to a low of 39 per 100,000 in 2001/02 before rising sharply in 2002/03 by 85% to 72 per, 100,000. The rates fell again in the following two financial years reaching 59 per 100,000 in 2004/05. This was followed by a rise in each financial year from 2004/05 onwards reaching a rate of 93 per 100,000 in

2007/08. At the present time it looks unlikely that the 2010 target will be achieved.

84. In 2007/08 the most frequently recorded type of incident to MOD civilians were 'slipped, tripped or fell on same level' (28 out of 76 incidents, 37%), 'struck against' (12 incidents, 16%) and 'physical movement' (7 incidents, 9%).

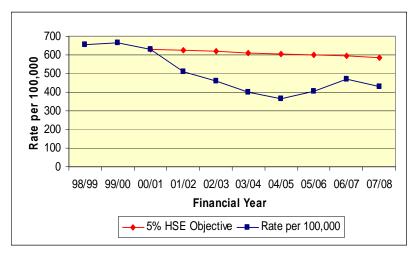
Figure 14: Serious injuries and illnesses to MOD civilian personnel



85. Between 1998/99 and 2007/08, the rate of serious injuries and illnesses to MOD civilian personnel rose from 600 per 100,000 in 1998/99 to a high of 618 in 1999/00, since then there has been a steady decline to a low of 305 per 100,000 in 2004/05 before rising to 394 per 100,000 employees in 2006/07 (**Figure 14**). The rate in 2007/08 fell by 15% to 335 per 100,000 on the previous financial year.

86. In 2007/08 the three major type of incident were 'handling' accounting for 72 of 274 incidents (26%), 'slipped, tripped or fell on the same level' (47 incidents, 17%) and 'medical condition' (44 incidents, 16%)

Figure 15: Major & serious injuries and illnesses to MOD civilian personnel



87. **Figure 15** when major and serious injuries are combined the MOD civilian rates are meeting the required 10% reduction in events (please note that these figures exclude fatalities to MOD civilians)

88. **Table 5** presents the data for major and serious injuries and illnesses to MOD Service and civilian employees by the Top Level Budget Management Group. The figures for 2007/08 cannot be included as this information is not captured by IRIS.

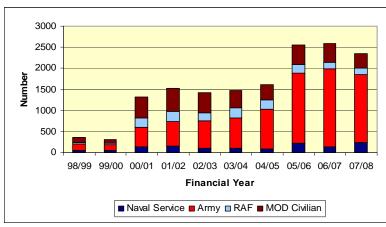
Table 5: MOD Service and civilian major and serious injuries and illnesses by the Top Level Budget Management Group

Top Level Budget Management Group	02/03		03/04		04/05		05/06		06/07	
	Civilian	Military								
ALL	435	821	369	891	338	1003	373	1062	407	1231
2nd Sea Lord/Commander in Chief Naval Home Command	9	41	8	31	3	30	0	26	0	1
Army Base Repair Organisation	3	109	0	0	0	0	0	0	0	0
Adjutant General	36	11	35	135	24	172	28	101	29	137
Chief of Defence Procurement	3	30	4	0	1	0	4	0	7	1
Central Top Level Budget	26	0	19	12	21	14	38	33	37	37
Commander in Chief Fleet	41	0	35	40	34	55	35	177	24	88
Chief of Joint Operations	0	12	2	7	0	12	0	14	2	19
Defence Aviation Repair Agency	32	0	12	0	0	0	0	0	1	0
Defence Logistics Organisation	153	24	126	19	149	14	152	14	142	8
Defence Science Technology Laboratory	3	0	3	0	1	0	3	0	0	0
General Officer Commanding Northern Ireland	7	55	11	53	11	50	10	49	18	53
Headquarters Strike Command	70	100	53	121	50	106	40	110	24	58
Hydrographic Office	0	0	0	0	0	0	0	0	0	0
Land Command	25	379	19	389	24	486	25	487	30	806
Meteorological Office	0	0	0	0	0	0	0	0	1	0
N/A	0	5	0	6	1	3	3	2	4	7
Royal Air Force Personnel & Training Command	11	55	16	78	17	61	18	49	9	9
UNKNOWN	16	0	26	0	2	0	17	0	79	7

HSE notifiable injuries and illnesses to MOD personnel

89. As explained earlier (see **page 7**), there is no legal requirement for the MOD to notify the Health and Safety Executive (HSE) of injuries and illnesses to Armed Forces personnel. However, to complete the information already provided in the previous pages on fatalities, major and serious injuries and illnesses, we provide the following information that assumes there was no exemption. Events involving MOD civilian personnel are likely to have been notified to the HSE through normal procedures.

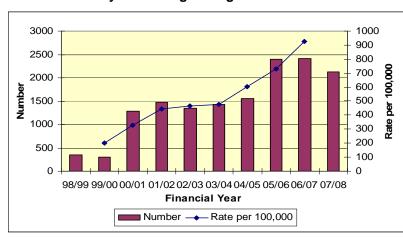
Figure 16: HSE notifiable events to MOD personnel



'sport' (293, 13%) and 'hostile activity' (213, 9%).

90. During 2007/08 there were 2,293 injuries and illnesses to MOD personnel that would have required notification to the HSE (**Figure 16**). This represents a decrease of 12% on the 2,594 events recorded in 2006/07. The majority of these were to Service personnel, 1,943 (85%). The most common kind of notifiable incident in 2007/08 was those involving 'slipped, tripped or fell on same level' which accounted for 348 (15%) of the incidents, followed by injuries resulting from

Figure 17: HSE notifiable events to MOD personnel Numbers and 3-year moving average rates

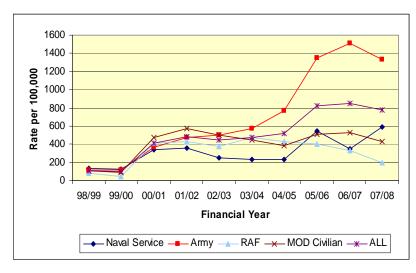


For rates, the horizontal axis label refers to the mid-point of a 3-year period, e.g. "99/00" refers to 1998/1999 – 2000/2001.

Rates and numbers for Service personnel exclude reservists.

The 2006/07 3-year moving average rate of HSE notifiable injuries and illnesses for all regular Service and MOD civilian personnel was 925 per 100,000 personnel (Figure 17). The increase between the three-year moving rates in 1999/00 and 2001/02 is likely to be the result of the second version of CHASP which was introduced in April 2000. The three-year moving rate 2006/07 showed an increase of 27% on the previous year's rate of 730.

Figure 18: HSE notifiable events to MOD personnel



Rates for Service personnel exclude reservists.

92. Over the period 1998/99 to 2007/08, the rate of notifiable injuries and illnesses has risen in all Services, with a major change between 1999/2000 and 2000/01 thought to be due to the introduction of version 2 of CHASP. The Army rates have increased each year with two dramatic increases from 1999/00 to 2000/01 with a rise of 218% from 116 to 369 per 100,000 and from 2004/05 to 2005/06 with an increase of 75% from 772 to 1.352 per 100.000. The fall in 2007/08 of 12% from 2006/07 from 1,509 to 1,331 per 100,000 is in contrast to the large increase of

major injuries reported by the Army for this reporting period therefore the drop is likely to be caused by the different reporting procedures on CHASP and IRIS for HSE notifiable injuries. The Naval Services showed an increase between 1999/00 to 2000/01 of 180% from 122 to 341 per 100,000 followed by a small increase of 4% to 353 per 100,000 in 2001/02 before dropping until 2004/05. In 2005/06 the Naval rate increased by 135% from 233 to 548 per 100,000, this rise may have been caused by the introduction of the NSINC and therefore increased reporting practises. The rate in 2007/08 was an increase of 71% from 345 per 100,000 in 2006/07 to 590 per 100,000. The RAF like the Army and the Naval Service had a major increase between 1999/00 and 2000/01, increasing by 813% from 45 to 411 per 100,000. In 2007/08 the RAF rate decreased by 42% from 334 to 195 per 100,000, this fall is likely caused by underreporting onto IRIS.

93. The rates for MOD civilians increased from 86 to 474 a rise of 451% from 1999/00 to 2000/01 likely caused by the introduction of version 2 of CHASP. They rose again in 2001/02 by 21% to 575 per 100,000, before falling until 2004/05 to 384 per 100,000. From 2004/05 until 2006/07 the rate rose each year reaching 523 per 100,000 before again falling in 2007/08 by 18% to 428 per 100,000.

Near Hits, Dangerous Occurrences and Environmental Events

Near Hits

- 94. In 2007/08, 766 near hits were recorded, accounting for 9% of the events recorded. The single most common category of causes recorded for this kind of event was 'moving vehicle', accounting for 133 incidents (17%).
- 95. From 2002/03 to 2006/07 the number of near hits has been declining with a fall of 45% from 1,273 to 703 respectively. In 2007/08 however the number of near hits increased by 9%. It is unclear why this fall has occurred or why the figure rose for this reporting period but it may be due to previous underreporting and confusion about what constitutes a 'near miss'.

Dangerous Occurrences and Environmental Events

- 96. During 2007/08 there were 13 "dangerous occurrences" and 138 "environmental events" recorded.
- 97. The most common kind of dangerous occurrence was due to the release of 'harmful substances' and 'moving/falling object' (3 out of 13 incidents, 23%) and 'machinery/equipment' (2 incidents, 15%).
- 98. **Table 6** shows the relationship between type of event and the general cause of the dangerous occurrence. Thus it is possible to identify that the 3 'harmful substances' was due to 'unprotected exposure to asbestos', 'carbon monoxide/utility gas' and 'inhalation'.

Table 6: Dangerous occurrences, Kind of event by Cause

Event Kind			,						
Everit Killu				Collapsing				Moving/	
		Animal/I	Built Estate	structure,		Harmful	Machinery/	Falling	Moving
Event Cause	AII		Infrastructure	platform	Handling	substance	Equipment	object	vehicle
All	13	1	1	1	1	3	2	3	1
Asbestos fibres -									
Unprotected exposure	1	0	0	0	0	1	0	0	0
Carbon monoxide/ utility									
gas	1	0	0	0	0	1	0	0	0
Contact with									
Chemicals/Gases/ Hot									
Liquids	1	0	1	0	0	0	0	0	0
Failed to follow laid									
down correct procedure	1	0	0	1	0	0	0	0	0
Inhalation	1	0	0	0	0	1	0	0	0
Involuntary Mishap	1	0	0	0	0	0	0	1	0
Lifting pushing pulling	1	0	0	0	1	0	0	0	0
Machinery operation	1	0	0	0	0	0	1	0	0
Overriding Safety									
Device	1	0	0	0	0	0	0	1	0
Railway accident									
derailment	1	0	0	0	0	0	0	0	1
Use of Compressed Air	1	0	0	0	0	0	1	0	0
Unknown	2	1	0	0	0	0	0	1	0

- 99. The most common kind of environmental incident involved 'harmful substances' (108 events, 78% of environmental incidences). The next most common kind of incident involved 'machinery/equipment' (9, 7%).
- 100. **Table 7** shows the relationship between kind of event and the general cause of the environmental incident. Thus it is possible to identify that of the events involving 'harmful substances' the most common causes were due to 'machinery operation' (16), 'moving of items from one place to another' (16) and 'loading/unloading' (15).

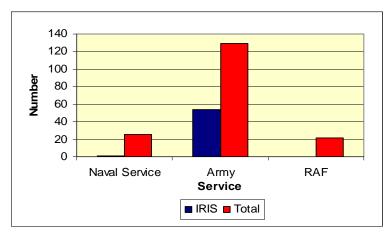
Table 7: Environmental events, kind of event by cause

Event Kind			Harmful	Machinery/	Moving	Not	Transport	
Event Cause	AII	Handling	substance	Equipment	vehicle	applicable	Incident	Unknown
AII	138	7	108	9	3	6	3	2
Carrying out normal duties	6	0	6	0	0	0	0	0
Dropping load	1	0	1	0	0	0	0	0
Exposed due to leaked/spilled/								
sprayed of substance during use	7	0	7	0	0	0	0	0
Failed to follow laid down correct								
procedure	1	0	0	0	1	0	0	0
Failure of control measures	3	0	3	0	0	0	0	0
Failure of quality control	1	0	1	0	0	0	0	0
Failure of substance containment								
system e.g. pipe/valve/tank	9	0	9	0	0	0	0	0
Failure to co ordinate activities	2	0	2	0	0	0	0	0
Involuntary mishap	2	1	1	0	0	0	0	0
Lack of due care and attention	7	0	4	1	0	1	1	0
Late complications /late effects	5	0	5	0	0	0	0	0
Loading/ Unloading	15	0	15	0	0	0	0	0
Machinery operation	19	0	16	3	0	0	0	0
Malfunction or failed during operation	8	6	0	2	0	0	0	0
Mobile Crane	1	0	0	0	1	0	0	0
Moving of items from one place to								
another	20	0	16	3	1	0	0	0
Other /unspecified nature of accident	1	0	1	0	0	0	0	0
Other road vehicle	1	0	1	0	0	0	0	0
Reaction to , or contact with	1	0	1	0	0	0	0	0
Refuelling at Sea	1	0	1	0	0	0	0	0
Safe system of work	1	0	1	0	0	0	0	0
Substance								
leaked/spilled/dropped/sprayed								
during handling or storage	14	0	13	0	0	1	0	0
Third party act	1	0	0	0	0	0	1	0
Tractor	1	0	1	0	0	0	0	0
Unloading/Loading stores	6	0	1	0	0	4	1	0
Unknown	3	0	1	0	0	0	0	2
Using Tools power or hand	1	0	1	0	0	0	0	0

Audit of the IRIS System

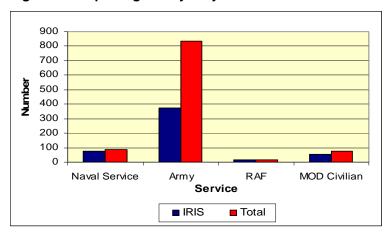
101. Following the discontinuation of CHASP in March 2007 and the delay before IRIS was introduced in December 2007, the individual incident notification cells were responsible for recording of incidents relevant to their personnel, assets and establishments. This data was then intended to be migrated onto IRIS. The Army (AINC), Naval Service (NSINC) and Defence Equipment and Support (DINC) each have their own notification cell for reporting health and safety incidents. The RAF and the Central Incident Notification Cell (CINC) do not maintain their own systems so the level of underreporting for these areas in unknown, therefore the following figures are categorised by personnel status and not by reporting cell.

Figure 19: Reporting of fatalities onto IRIS.



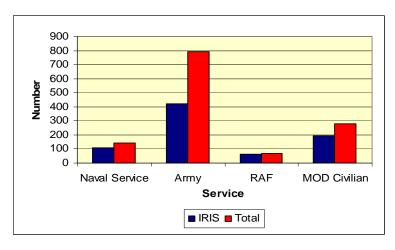
102. **Figure 19** compares the number of fatalities for each Service that are recorded on IRIS with the number recorded by the DASA mortality database. There are no fatalities reported onto IRIS for RAF personnel. For the Naval Services and the Army 96% and 58% respectively of the fatalities have not been recorded onto IRIS.

Figure 20: Reporting of major injuries onto IRIS



103. For major injuries IRIS shows underreporting in all areas (**Figure 20**). The Army has the largest difference with 55% followed by MOD civilians with 29% of records missing and then the Naval Services with 17%. The RAF only have a slight difference (6%), as the RAF do not have there own notification cell it is likely that the level of underreporting for the RAF is higher.

Figure 21: Reporting of serious injuries onto IRIS



104. **Figure 21** examines the number of serious injuries recorded by IRIS compared to the number recorded by the incident notification cells. The Army has the largest number of missing records with 47% followed by MOD Civilians with 31% and the Naval Services with 23%. The RAF have 3% of missing records. As there is no other source of data for the RAF it is unknown whether this is a true representation of the number of missing incidents.